IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Norfolk Division

R.M.S. TITANIC, INC.,
successor-in-interest to
Titanic Ventures, limited partnership,
Plaintiff,

v. **Civil Action No. 2:93cv902**

THE WRECKED AND ABANDONED VESSEL, ITS ENGINES, TACKLE, APPAREL, APPURTENANCES, CARGO, ETC., LOCATED WITHIN ONE (1) NAUTICAL MILE OF A POINT LOCATED AT 41 43' 32" NORTH LATITUDE AND 49 56' 49" WEST LONGITUDE, BELIEVED TO BE THE R.M.S. TITANIC
in rem,
Defendant.

DECLARATION OF PAUL F. JOHNSTON

I, Paul F. Johnston, pursuant to 28 U.S.C. § 1746, declare under penalty of perjury that the following statement is true and correct.

1. I am employed at the Smithsonian's National Museum of American History, where I am Curator of Maritime History, a position I was appointed to in 1989. Prior to that, I was Curator of Maritime History at the Peabody Essex Museum in Salem, MA from 1981-1989. I hold a BA in English Literature from Middlebury College and a Ph.D. in Archaeology from the University of Pennsylvania. In my current capacity, I am responsible for maritime historical and archaeological research and publication; collecting and collections management; exhibitions, and internal and external public service. I also serve as Secretary for the Council of American Maritime Museums, a group of around 90 member institutions dedicated to the preservation of maritime heritage. I am an Emeritus Member (and former Chair) of the Advisory Council on Underwater Archaeology ("ACUA"). The ACUA serves as an international advisory body on issues relating to underwater archaeology, conservation, and submerged cultural resources management.

2. As my attached resume indicates, I have significant and relevant personal and professional background in the areas of maritime and terrestrial history; archaeology; collections management; historical archaeology; shipwreck salvage and ethics; maritime/nautical archaeology; maritime project field logistics; and the stabilization, conservation and curation of waterlogged artifacts. I sought, located and excavated the only shipwreck ever permitted by the State of Hawaii, which happened to be the

first ocean-going yacht built in the United States and the personal yacht of Hawaiian monarch Kamehameha II. I have worked with the Department of State, U.S. Navy, and NOAA staff and attorneys on multiple maritime legal and ethical matters including the Abandoned Shipwreck Act; the 2001 UNESCO Convention on the Protection of the Underwater Cultural Heritage, and the NOAA *Monitor*/Mariners Museum agreement. I have published widely on maritime and ethical matters for both peer-reviewed and general interest periodicals, and I have won awards for my research and writing. I have worked on shipwrecks and other submerged cultural resources in all the globe's major seas and oceans.

3. NOAA has asked me to review and provide input on the plan submitted by RMST, "RMS *Titanic* Expedition 2020 Research Design," ("Research Design") seeking court approval to conduct an expedition to the wreck site and salvage artifacts. I have also reviewed: a memorandum provided by RMST to the Court with the Research Design; prior materials submitted by RMST to the Court that outline RMST's plan in more general terms; NOAA's response to these earlier submissions; and the transcript from a hearing held on February 20, 2020. I have also reviewed the Covenants and Conditions which govern RMST's substantial responsibilities for its existing *Titanic* artifact collections. I am not being compensated for my review of this plan. The views expressed here are my own, based on my personal and professional experience and background; these views may or may not represent the views of the Smithsonian Institution.

4. While the Research Design is lengthy, in many areas it does not contain detailed information to support the activities RMST wishes to conduct. My comments will focus on three key areas of concern: (1) the lack of demonstrated and dedicated funding for the project and all subsequent activities, particularly conservation and curation of any salvaged artifacts; (2) the likelihood of significant damage to the ship and its contents from the salvage of the Marconi Wireless and its related components; and (3) the lack of justification for the activities, particularly for the salvage of the Marconi Wireless and its related components. My focus on these areas should not be taken as my concurrence or agreement with other parts of the Research Design not expressly addressed here.

Funding Issues

5. RMST attests it has the funding for the expedition and related expenditures, such as conservation, but it does not provide a budget because such information is claimed to be proprietary (page 32). The *Titanic* is an international maritime memorial and a gravesite for those lost when it sank. In my opinion, the scope, consequences and gravity of this project are too great to rely only on RMST's attestation alone, especially when RMST only recently emerged from bankruptcy. RMST should have in place a clear, realistic and transparent budget, with appropriate contingency mechanisms, and make that available for professional audit.

6. The financial costs of an expedition of this nature are extremely high. My principal concern is for the protection and proper care of any artifacts that may be salvaged, with additional concern for retaining the integrity of the *Titanic* fabric to prevent unnecessary stress on the remaining structure. The plan lists certain items which RMST hopes to salvage inside the ship, and an unspecified number of artifacts – some preselected (but not identified) and other so-called "objects of opportunity" (page 25) – that it wants to salvage from the debris field. All of these artifacts will require extensive evaluation, treatment and care from the moment they are removed from their findspots, and for as long as RMST possesses them. Undertaken correctly and with the appropriate respect that artifacts from the *Titanic* warrant, professional conservation is neither inexpensive nor quick. Without any financial details concerning how much RMST has budgeted for such things as field salvage, follow-up objects documentation, recordation, processing, stabilization, conservation, curation, and exhibition, it is not possible to ascertain RMST's ability to complete the outlined research, salvage and consequent activities involving the artifacts. This is especially so because we do not know how many artifacts might be salvaged, their condition or composition, nor what their conservation needs might be.

7. For example, different materials even in a single artifact require different stabilization and conservation treatments. A simple table knife with a wooden, bone or ivory handle may serve as an example. An iron or steel blade might require electrolysis, or casting of lost elements, while the handle might require first removal of the chlorides and then replacement of the seawater in the cellular structure with synthetic wax (PolyEthylene Glycol or PEG treatment) or possibly silicon oil. Artifacts made of multiple organic and inorganic materials (e.g., wood, textiles, ceramics, glass and metal for example), such as those likely to be found in the Silent Room, would require especially difficult, time-consuming and expensive treatment, since the components might first require separation before treatment, to avoid cross-contamination of treatment chemicals.

8. The last *Titanic* artifacts were salvaged 16 years ago in 2004, but according to the information I have reviewed, there are still ca. 500 artifacts, or approximately 1/10 of all the salvaged artifacts, that have been "stabilized" but not fully conserved to date (or have been identified for further conservation). Some of these may have been recovered in earlier expeditions prior to 2004. That lengthy interval of a minimum of 16 years is more than adequate for artifact conservation, if RMST is intending to complete and fulfill the preservation requirements of the Covenants and Conditions. In light of RMST's recent bankruptcy, I would not be comfortable approving more artifact salvage without (a) some verifiable evidence and assurance of RMST's solvency; (b) an assured, dedicated funding source; and (c) conservation completion of all the *Titanic* artifacts already in RMST's possession.

9. The matter of the August 2019 eBay listing of what was purported to be a RMST-recovered *Titanic* shipwreck artifact for sale is especially concerning relative to RMST's collections management of *Titanic* artifacts. The corporate lack of knowledge of this artifact and its possible theft or loss from its collection indicates a

lack of control over objects for which it is salvor in possession. This eBay sale should trigger an immediate and complete artifact inventory, to ensure that nothing else for which RMST is responsible has been lost or stolen from the collection for which it has responsibility. Where is that fragment of the "Big Piece" that was offered on eBay today? Is it back in the RMST collection? Has it been recorded and cataloged? What—if any—steps has RMST taken to prevent further theft of artifacts for which it is responsible? Permitting additional salvage prior to verification of current holdings and their conservation would not be responsible best practice in either professional collections management or scientific archaeology.

Likely Damage to the Ship from Salvage

10. *Titanic* is an iconic grave site, and the wreck and all its artifacts constitute international underwater cultural heritage. The plan says that all tasks are planned to be "minimally invasive" (page 25) and that its actions will be conducted to "reduce negative impacts" (page 38). The plan certainly contemplates, however, that there will be damage to the wreck. For example, in its optional plan, RMST states that it will conduct activity as long as it does not result in "excessive physical impact" to the wreck (page 54). The plan should include a forthright and complete discussion of exactly what will be done, what damage is likely to result and what damage it expects to deliberately inflict. Without that analysis, and the definition of "excessive physical impact," it is not possible to determine whether the supposed benefits of the action are worth the costs to the wreck.

11. The space containing the most desired pieces of the radio components contain what look to be at least four larger items that are characterized as "hazardous" due to containing "large amounts of oil" (page 50). If the plan's diagrams and renderings are accurate, these items are within feet, perhaps inches, of other targeted artifacts, but there is no information regarding whether they may still be attached to the ship or remaining walls, how fragile they may be, or any information on their current position. Although the plan does not explain what these items are, it is known that Marconi used transformers and condensers which were housed inside metal tanks and filled with oil. Until it is known with certainty what type(s) of oil(s) were used in the *Titanic* wireless equipment, it is impossible to be confident that salvage of large machinery in the confined space of the Silent Room could be undertaken without breakage and oil leakage/spillage, contaminating the wreck and the environment in general. The possibility of avoiding these items is extremely unlikely, especially if they are as deteriorated as everything else RMST asserts is fragile and deteriorated, and in light of the strong and powerful currents that have been described as running around and through the hull. In my opinion, this space should be avoided altogether due to the high likelihood of environmental pollution and unnecessary damage to the fabric and structural integrity of the wreck.

12. As none of the targeted radio equipment in the Silent Room is near or under the skylight, it is highly likely that any artifact salvaged from within the Silent Room would require cutting into the wreck through the ceiling or walls of the Marconi Suite

for access. The plan states that multiple sections of the ceiling/roof may be removed (page 23), but it provides no information about the size of these sections, how they will be cut or removed, how the archaeological context below the cuts will be protected and preserved, or how or where the cut pieces will be disposed of. There is no discussion of how this action will impact the remaining ceiling/roof sections, and it can be argued convincingly that cutting sections or a section of the Marconi room ceiling away will destabilize the surrounding fabric and cause it to collapse immediately or sooner than it would have, if it had been left alone. Removal of part or all of the ceiling also will likely enhance the movement of currents and other deleterious environmental effects in the confined spaces.

13. There is inadequate information on the two ROVs and the proprietary tools RMST is developing to penetrate the radio room and mechanically salvage the radio components. Both ROVs as depicted (page 61) are far too large to fit into the radio room. If they attempt to rest or land on the ceiling/roof of the Marconi Suite, described as being fragile, they are likely to break through the entire structure and crush the contents. They will not be able to hover or "fly" overhead either, since to do that they would need to have zero buoyancy and thus would have no leverage to conduct meaningful work. In this regard, it resembles the weightless conditions of working in outer space. There is mention of a smaller ROV that will be deployed to penetrate the Silent Room, but there are no details of its size, capability, or the tools planned for salvage of the radio equipment.

14. It is not clear how the video surveillance inside the wreck will be accomplished. If the surveillance will only be conducted using an ROV outside the wreck, then information concerning the length, size, dimensions, and operational parameters of its manipulator needs to be known to assess the feasibly and potential damage from attempting to reach through the existing skylight. If smaller ROVs are expected to be inserted inside the wreck then it is important to know whether they will be tethered or autonomous units. This topic is especially significant, relative to how they penetrate the hull to survey and possibly salvage artifacts. Tethered ROVs drag lines wherever they go and consequently can cause collateral damage to nearby artifacts, their contexts and other wreck features.

15. Specific salvage means and methods should be presented in detail, especially as RMST says without explanation that salvage presents significant challenges and difficulties. One of the challenges is that, in contrast to the debris field, most of the artifacts targeted for recovery are or (at one time) were attached to the wreck structure (walls/bulkheads or decks). It is not clear whether RMST knows if walls or portions of walls still exist, although the wall on which some of this equipment was attached was observed as recently as 2019 (page 64). There is no discussion of the mechanical means by which the ROV(s) would salvage the radio objects off the wall(s) and deck. Would they cut, burn, pry or saw them off? How would a small ROV or AUV pick up and move a heavy artifact in a confined space? The deck on which the motor-generator remains bolted is apparently still intact, but no discussion of how that equipment will be dislodged is provided. Without specific information concerning

how the salvage will occur under various contingencies, including the presence of walls/bulkheads, it is not possible to know the extent of damage that will occur, or what artifacts or other significant items will be destroyed in the space (such as in the crew members' living quarters). If a smaller ROV/AUV with extraction tools will be deployed, details about this device must be provided to demonstrate its proven capabilities to accomplish the tasks, and how the device will achieve the leverage necessary for the extraction while preserving adequate visibility to undertake the multiple tasks.

16. RMST proposes to deploy a suction dredge in the Silent Room. More information is needed about this equipment to adequately review this, including how powerful it is, and its purpose, to understand the potential risks and damage. For example, how will the operators of the ROV/AUV keep from damaging small finds that are sucked up, and into what sort of filtering device will the dredge spoil be directed, to ensure the retention of small finds or pieces of the radio apparatus that break off during salvage? Or is the dredge spoil spewed out over the wreck and debris field?

17. Any deployment of mechanical or suction devices inside the wreck will stir up silt and will undoubtedly render visibility almost zero in the very limited and confined spaces of the Marconi Suite. It is reported that the rusticles all over the ship are fragile and that they hang from the ceiling of the Marconi Suite. When disturbed, they enter the water column as dust. The combination of silt and debris from rusticles creates a "silt out," with the scattered particles in the water column creating a reflective backscatter from any lights. This diminished visibility will seriously hamper efforts to see and manage salvage operations such as precision cutting or burning of radio elements off the walls or floor of the Silent Room, and increase the risk of collateral damage to nearby artifacts and wreck features. Depending on currents, it could take hours for the silt to settle or disperse enough to permit delicate maneuvering of the ROV and its cutting instruments. How does the salvage team plan to manage this? There should be some discussion of the likelihood of visibility affected by the dredge and other operations, and how to mitigate--or outwait--the diminished oversight of the object and its tight quarters.

18. At no point in the research design is there any discussion for finding and managing human remains so that they remain undisturbed and undamaged. RMST should acknowledge the site's unique status as an international grave site and have a plan for handling this most sensitive aspect of the site. While human remains may not have been discovered to date, that does not mean that they will not be encountered in future investigations either within the confines of the wreck or outside in the debris field in anoxic environments.

Justification for Activities

19. The plan proposes three main activities: video surveillance outside and inside the ship; artifact salvage from the debris field; and Marconi Wireless radio components salvage from inside the ship.

20. **Video surveillance**. If it can be conducted with minimal impact to the ship, and assuming some questions I pointed out above can be answered, extensive video mapping of the ship's exterior and interior could provide valuable information to researchers and academics, such as comparatively evaluating deterioration or preservation in and outside the wreck. Unfortunately, the plan does not suggest that there will be extensive mapping, but states that it will be limited mostly to support the salvage of the radio components (page 25), somewhat limiting the value of this activity. Reports reviewed by this writer indicate multiple impacts along the *Titanic* structure during earlier video recordation. I point this out only to make clear that while video surveillance can be useful and valuable, it does pose some risk of damage to the wreck.

21. **Artifact Salvage from the Debris Field.** A primary 2020 expedition component is a clearance request for salvaging artifacts from the shipwreck debris field. Salvage from the debris field has been allowed in the past, and I assume would be permitted in the future, but further information is required to enable adequate professional review of this expedition component. For example, because the number and characteristics of the items RMST wants to salvage is not known, it cannot be known if the items have scientific, educational or cultural value, or if RMST is merely browsing for interesting exhibitable things to freshen their exhibitions. RMST's criteria for salvage, including (1) uniqueness of the artifact; (2) contribution to the understanding of the ship, passengers, and life on board; (3) technical considerations; and (4) any conditions specified by the U.S. District Court, is a "Great Pyramid" method of artifact salvage – a method that focuses more on the glamour of an item than its merit for academic or scientific advancement – that is outdated scientifically and in best practices archaeologically.

22. **Artifact salvage of the radio components from inside the ship.** The primary justification given for salvaging the radio components is that the ceiling/roof of the Marconi rooms will "collapse in the not too distant future," resulting in damage or loss to the equipment (page 23). RMST does not know when the "not too distant future" is, and no one can credibly predict with any certainty when that may occur. To avoid wading into that dispute, I merely point out that all shipwrecks disintegrate into the bottom eventually. If ship disintegration is the only criterion, then there is no criterion. No salvage is off limits and no amount of destruction is too great as long as the item to be salvaged can be characterized as "new and exciting" (page 22). There will be always be another space that is soon to collapse or deteriorate.

23. A second justification given for the salvage of the radio components is their declared uniqueness.[1] As Park Stephenson himself states in a 21 February 2020 web article, "The components were standard Marconi…"[2] In addition, the existence of period documentation that was used by Mr. Stephenson to construct a virtual model of the room argues against salvage. Most of the Marconi equipment proposed for RMST salvage relates to electrical power delivery and management, and not to the reception or transmission of wireless communications. Moreover, similar Marconi wireless gear was in use elsewhere at the time. For example, the Smithsonian's National Museum of American History (NMAH) has multiple components of the rescue ship *Carpathia*'s Marconi radio, which were removed, replaced and retained by a Marconi technician after the vessel returned to New York with the *Titanic* survivors aboard.[3] Like the *Titanic* Marconi radio, the *Carpathia* radio elements were commonplace, off-the-shelf components. The NMAH also has a contemporary fixed gap Marconi transmitter: (https://collections.si.edu/search/detail/edanmdm:nmah_709557?q=fixed+gap+marconi+transmitter&record=2&hlterm=fixed+gap+marconi+transmitter)

24. Other museums also have examples of this early Marconi technology readily available for comparative research and study; in 1999, the Oxford University History of Science Museum actually became the repository of the Marconi PLC corporate collection, including but not limited to contemporary Marconi equipment; a significant majority of the equipment believed to have been in the Operators' Room; one piece of equipment (power switchboard) of the type believed to have been in the Silent Room (as appearing in dive imagery and reconstructions from dive data), and two rotary discharger disk assemblies similar to the type believed to have been in the *Titanic* Silent Room. http://www.mhs.ox.ac.uk/

25. The Antique Wireless Museum, in Bloomfield, NY has several items of contemporary Marconi equipment, including a fairly complete set of equipment for the Operators' Room (minus the Fleming Valve Detector available at Oxford and other places) www.antiquewireless.org. Other repositories with similar Marconi materials and information include the Spark Museum of Electrical Invention; the Maritime Radio Historical Society; The Mariners Museum & Park, Hampton, Virginia; the Society of Wireless Pioneers; the Museum of Radio & Technology, West Virginia; the New Jersey Radio Technology Museum; the Finnish Radio Historical Society; the Kouvolan Putkiradiomuseo; the Estonia Radio Museum; the

[1] In RMST 585.2, page 9, RMST chose to describe some of the historical *Titanic* wireless gear with a reference to Star Trek's "warp drive dilithium crystals" in the caption accompanying the image. This reference is inappropriate and frivolous and belies the serious nature of what RMST wants to do.

[2] See Stephenson, Park, "A Compelling Reason for the Radio Set Salvage, http://jproc.ca/radiostor/titanic.html, dated 21 February 2020, and Wenaas, Eric P. and Parks Stephenson, "Wireless Equipment of the Titanic: A Commemorative Overview," *AWA Review* 25.2012, p. 21ff. This 2012 article was not available for full citation at the time of writing due to coronavirus isolation.

[3] See Johnston, Paul F., "Bernie's Brownie and Harry's Jars: A Tale of *Titanic*," *Sea History* 138 (Spring 2012) 12-16.

New England Wireless & Steam Museum; and the Vintage Radio and Communications Museum of Connecticut. The *Titanic*'s Marconi wireless setup is not a unique piece of equipment. If there is nothing unusual about it and extensive knowledge about the system is already known, why bother to salvage in light of the significant risks to the wreck the salvage would create?

27 April 2020
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Editorial Advisory Board, *Nautical Research Journal*

PUBLICATIONS:

Books and Book Chapters:

Paul F. Johnston (ed.), *ACUA Underwater Archaeology Proceedings* (Tallahassee, FL: Advisory Council on Underwater Archaeology, 2016).

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PROFESSIONAL EXPERIENCE (Select):

2005-2008, Harley-Davidson Museum, Milwaukee, Wisconsin (opening 2008). Consultant on site, structure, design, exhibits design and content, environmental issues.

1995-2000 Director, archaeological discovery and excavation of the wreck of *Ha 'aheo o Hawaii* (ex *Cleopatra's Barge*), the Royal Hawaiian yacht of King Kamehameha II, sunk in Hanalei Bay, Kauai on 5 April 1824. Built in Salem, MA in 1816, *Cleopatra's Barge* was the first oceangoing yacht built in the United States.

1991-93 Project Director, archaeological expedition to the wrecked steamship *Indiana* (1848), lost in Lake Superior off Whitefish Point, MI in 1858.

1990 Appointed Supervising Curator, Division of Transportation, National Museum of American History, Smithsonian Institution.

1989 Appointed Curator of Maritime History, National Museum of American History, Smithsonian

1989-92 Consultant, Turks and Caicos Islands National Museum, British West Indies. Foundation of new museum, including site selection, fundraising, administration, collections management, exhibition development and implementation.

1987-90 Consultant, Stone & Webster Engineering Corporation, Boston, MA. Submerged cultural resource research and management.

1986 Participated in seminar and consulted on museums and archaeological sites in Finland and the Soviet Union under sponsorship of Finnish government. Program included paper presentation at seminar, visitation at shipwreck site of *St. Nicolai*, an 18th century Russian warship off Kotka, Finland, and trips to maritime museums in Tallinn, Estonia and Leningrad, Russia. American Participant Program in East Africa, United States Information Agency. Participated in Bicentennial of American-Mauritian Relations at Port Louis, Mauritius and inauguration of American Studies Program at Mahatma Gandhi Institute, Mauritius. Program also included travel and lecture in Somalia, East Africa.

1985 Participant, International Exchange Among Museums Program of the American Association of Museums International Council of Museums. Six-week residency at the Bodrum Museum, Bodrum, Turkey. Work on the hull reconstruction of the 11th century AC Serce Liman shipwreck under J. Richard Steffy and Dr. Frederick van Doorninck of the Institute of Nautical Archaeology (INA). See below, 1978, 1977.

1984 Guest Faculty, Sea Education Association (SEA) of Woods Hole, MA. Voyage aboard SEA's staysail schooner *Westward* from Lunenburg, Nova Scotia to Bath, ME. Instructor, Massachusetts Bay Marine Studies Consortium (MBMSC). Taught History of Seafaring at Boston University.

1983 Instructor, MBMSC (see above).

1981 Appointed Curator of Maritime History, Peabody Museum (now Peabody Essex Museum) of Salem.